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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,959	10/13/1999	MAKOTO YOSHIDA	501.35437VX1	6819

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EXAMINER

POMPEY, RON EVERETT

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/416,959

Applicant(s)

YOSHIDA ET AL.

Examiner

Ron E Pompey

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 42-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 4,859,619) in further view of Ho (US 4,954,214) and Tseng (US 6,090,700).

Wu discloses the steps of:

first MISFETs (65, fig. 6) arranged in said first portion;

second MISFETS arranged in said second portion;

a plurality of conductor plugs (81, fig. 7) formed in said insulating film in said first and second portions;

a first conductive strip (81, fig. 7) formed on said insulating film in said first portion and electrically connected to one of a source and a drain region of said first MISFETs by said conductor plugs; and

a second conductive strip (81, fig. 7) formed on said insulating film in said second portion and electrically connected to one of a source and a drain region of said second MISFETs by said conductor plugs (col. 4, ln. 39 – col. 5, ln. 22).

Wu discloses the claimed limitations except wherein the second opening in the second insulating film is formed over the first conductor plugs formed in one of said first

openings in the first insulating film or the specific materials of the conductor plugs. The examiner *takes official notice* that forming the second opening over the first conductor plug is a matter of design choice, because photolithographic techniques can form opening anywhere one skilled in the art prefers to put them (see Ho fig. 4c; col. 8, lns. 35-45) and also the materials used are commonly known to be used in interconnect processing.

3. Wu fails to disclose some of the limitations of claims 42 and 47:

wherein said first and second conductive strip is formed in a separate manufacturing step from said first conductor plugs.

However, Tseng do disclose these limitations in elements 34 A-C, fig. 11.

Therefore one of ordinary skill in the art would want to planarized the conductor plugs in order to have level conductive strips for better electrical connection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 50 and 51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The examiner sees no disclosure, in the specification or drawings, of "a plurality of first openings formed simultaneously in said first insulating film above said

first and second portions; and further comprising: first silicide layers formed between surfaces of said first semiconductor regions and said plurality of first conductor plugs...”.

Response to Arguments

6. Applicant's arguments filed 9-25-03, pertaining to claims 42-51, have been fully considered but they are not persuasive. The applicant has not overcome the *prima facie* case by stating that it is not common to use conductor plugs in memory arrays. Wu is one example that refutes this statement. Wu forms conductor plugs simultaneously in memory array as well as a peripheral device. Therefore, a general teaching, in Tseng, of forming conductive plugs and contact pads on an integrated circuit does read on forming conductor plugs and contact pads on the devices in Wu for the reasons stated in the rejection.

Conclusion


7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

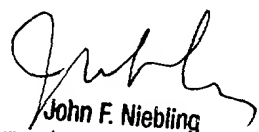
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E Pompey whose telephone number is (571) 272-1680. The examiner can normally be reached on flex schedule.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 and any inquiry of a general nature should be directed to the receptionist whose telephone number is (703) 308-0956.


Ron Pompey
Art Unit: 2812
January 8, 2004


John F. Niebling
Supervisory Patent Examiner
Technology Center 2800